

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
15 December 2005 (15.12.2005)

PCT

(10) International Publication Number  
**WO 2005/119354 A1**

(51) International Patent Classification<sup>7</sup>: **G02F 1/167**

(21) International Application Number:  
PCT/JP2005/010630

(22) International Filing Date: 3 June 2005 (03.06.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2004-167723 4 June 2004 (04.06.2004) JP  
2005-147530 20 May 2005 (20.05.2005) JP

(71) Applicant (for all designated States except US): **CANON KABUSHIKI KAISHA** [JP/JP]; 30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo 146-8501 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **IKEDA, Tsutomu** [JP/JP]; 1-60-3, Bessho, Hachiohji-shi, Tokyo

192-0363 (JP). **SODA, Takehiko** [JP/JP]; 5-21-5-302, Shinyoshidahigashi, Kohoku-ku, Yokohama-shi, Kanagawa 223-0058 (JP).

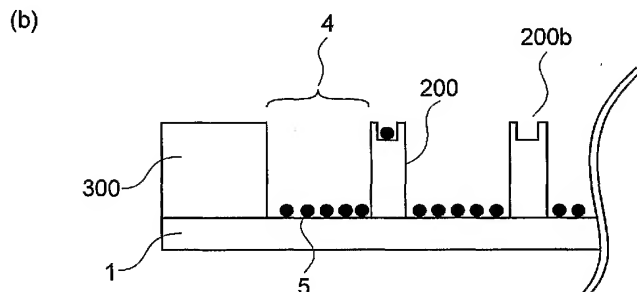
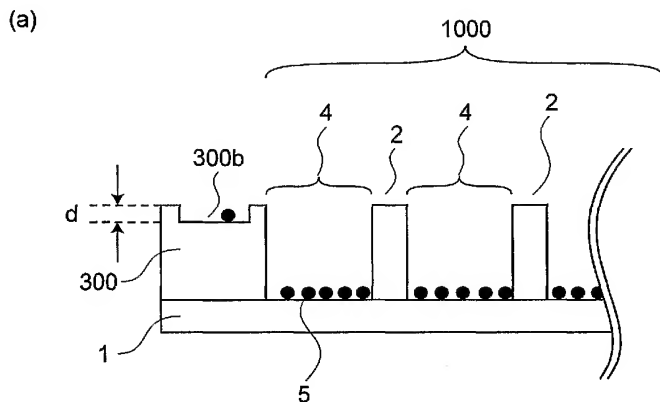
(74) Agent: **YAMADA, Ryuichi**; Toko International Patent Office, Hasegawa Building 4F, 7-7, Toranomom 3-chome, Minato-ku, Tokyo 105-0001 (JP).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: PARTICLE MOVEMENT-TYPE DISPLAY APPARATUS



(57) Abstract: A particle movement-type display apparatus is constituted by a pixel portion (4), a peripheral area (300,200) around the pixel portion, and particles (5). At least a part of the peripheral area around the pixel portion is provided with a recess portion capable (300b,200b) of accommodating a part of the particles therein.

WO 2005/119354 A1



GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*